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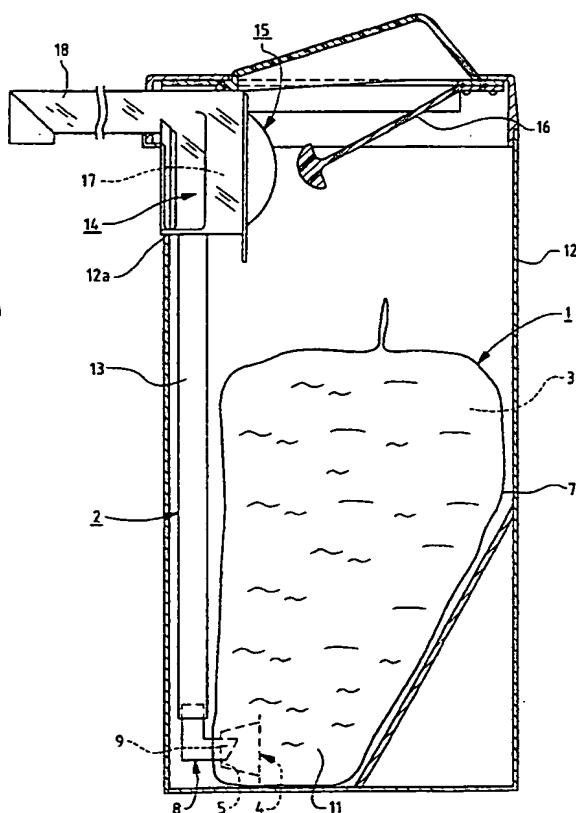
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[Continued on next page]

(54) Title: **DEVICE AT PACKAGES, COUPLING MEMBERS AND METHOD FOR APPLICATION OF A COUPLING MEMBER**



(57) Abstract: The present invention relates to a device at packages, coupling members and method for application of a coupling member. The device comprises coupling members (4, 8) with non-circular coupling portions (5, 9) which fit together only if they have the same non-circular shape. The non-circular coupling portions (5, 9) are also located relative to the package (1) such that a conduit (13) for discharging product (3) from the package (1) attains a predetermined position in relation thereto or the conduit (13) can be rotated to such a position.

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Device at packages, coupling members and method for application of a coupling member.

The present invention relates to a device at packages, coupling members and a method for application of a coupling member. At the device according to the invention the packages are adapted for location in a container, wherein the package is made of synthetic material, wherein a discharge or outfeed device is provided to discharge a liquid or semi-liquid product, e.g. ketchup, mustard, mayonnaise and similar or skin cream, shampoo, soap and similar or medicine, from the package when said package is located in the container, wherein the package comprises a coupling member with a coupling portion, wherein the coupling member is located in the package such that it will be situated at the bottom of the container when the package is located therein, wherein the discharge device comprises a conduit for feeding product coming from the package, wherein the conduit includes a coupling member with a coupling portion, wherein the coupling member of the package is located within an unbroken portion of the wall of the package and wherein the coupling members of the package and the discharge device can be connected to each other by bringing the coupling portion of the coupling member of the discharge device to penetrate the unbroken portion of the wall of the package and then bring it to cooperate with the coupling portion of the coupling member of the package such that said coupling members are interconnected.

The publication EP 0 042 857 describes a package of the abovementioned type. This package is located in a container and there is a coupling device similar to the abovementioned coupling device. The publication US 6 109 315 describes a coupling device at packages. According to this publication, the coupling device may include oval coupling portions. The publication US 5 452 826 describes a package which is located in a container and

## 2.

there is a pump device for pumping out a product in the package.

None of said publications describes a device which, on one hand, minimizes the risk of connecting the wrong  
5 discharge device to the package or vice versa and, on the other hand, solves the problem that the conduit for connection to the package for discharging the product therefrom, during connection, attains an appropriate orientation relative to the package.

10 The object of the present invention is to provide a device eliminating the abovementioned drawbacks and this is achieved while the initially defined device has been given the characterizing features of primarily subsequent  
claim 1. Suitable coupling members have the characteri-  
15 zing features of subsequent claim 23 and a method for applying a coupling member to the package is defined in subsequent claim 24.

Since the device has been given said characterizing features, a substantial reduction of the risk that the  
20 wrong discharge device is connected to the package or vice versa is reached. Additionally, an appropriate orientation relative to the container is obtained when the package is brought into said container along with the conduit, whereby a full package with associated discharge  
25 device more easily and quicker can be located in and on respectively, the container.

The invention will be further described below with reference to the accompanying drawings, in which

figure 1 is a side view of a package and a discharge  
30 device, wherein the package and the discharge device are interconnected by means of a device according to the invention;

figure 2 is a perspective view of coupling members forming part of the device according to the invention;

35 figure 3 is a section III-III through the coupling members of fig. 2;

## 3.

figure 4 is a side view of the coupling members of fig. 2 after connection to each other;

figure 5 is a perspective view of alternatively designed coupling members forming part of the device according to the invention;

figure 6 is a section through an alternatively designed lower part of the discharge device;

figure 7 illustrates with a schematic side view a packing device in which a coupling member is located in the package;

figure 8 schematically illustrates a control device for guiding the coupling member of the package such that it is held in a predetermined position during location of the package; and

figure 9 is a section IX-IX through the control device and coupling member of fig. 8.

In fig. 1 there is illustrated a package 1 and a discharge or outfeed device 2 for discharging the product 3 in the package 1.

The package 1 is made of a synthetic material and the product 3 therein is liquid or semi-liquid. Examples of products 3 in the package 1 are foodstuff, e.g. ketchup, mustard, mayonnaise and similar. Alternatively, the package 1 can contain skin cream, shampoo, soap or medicine.

The discharge device 2 can be connected to the package 1 for discharge of said product 3 therefrom. In order to carry through this interconnection of the discharge device 2 and the package 1, a coupling member 4 is located in the package 1. This coupling member 4 includes a coupling portion 5 and it is located on an unbroken portion 6 of the wall 7 of the package 1. This discharge device 2 includes a coupling member 8 with a coupling portion 9, said coupling member 8 being connected to the coupling member 4 of the package 1 by bringing it to penetrate the unbroken portion 6 of the wall 7 of the package 1. When the unbroken portion 6 of the wall 7 is broken, the coupling portion 9 of the coupling mem-

## 4.

member 8 is brought to cooperate with the coupling portion 5 of the coupling member 4 of the package 1 such that the coupling members 4, 8 are interconnected.

When the coupling portion 9 of the coupling member 8 of the discharge device 2 penetrates the unbroken portion 6 of the wall 7, one or more lugs 10 of wall material can be bent inwards such that the lug or lugs 10 will be situated between the coupling portions 5, 9 of the coupling members 4, 8 (see fig. 4).

10 The coupling portions 5, 9 of the coupling members 4, 8 have such shape that they attach to each other when said coupling members 4, 8 are interconnected and they cooperate with each other such that a liquid-tight connection is obtained between said members.

15 Since the unbroken portion 6 of the wall 7 has been penetrated during the interconnection of the coupling members 4, 8, the package 1 has also been opened such that the product 3 therein can be discharged or dispensed through the discharge device 2.

20 In order to prevent interconnection of a package 1 and a discharge device 2 not belonging thereto, i.e. to prevent that a package 1 with a certain product 3 is connected to a discharge device 2 for discharge of another product 3, the package 1 and the discharge device 2 are  
25 interconnectable to obtain the liquid-tight connection therebetween only if the coupling portions 5, 9 of their coupling members 4, 8 have non-circular shapes which are adapted to each other.

The non-circular shape of the coupling portion 5 on the coupling member 4 of the package 1 is preferably chosen such that if e.g. a coupling portion 9 with a circular or other unfit shape on a coupling member 8 on a discharge device 2 is connected to said non-circular coupling portion 5 on the coupling member 4 of the package 1,

35 a) it is not possible to interconnect the coupling portions 5, 9 of the coupling members 4, 8 such that they attach to each other and/or

5.

b) after interconnection of the coupling portions 5, 9 of the coupling members 4, 8, gaps appear between said coupling portions 5, 9 such that the product 3 leaks out of the package 1 through said gaps.

5       The coupling portion 5 on the coupling member 4 of the package 1 preferably has such a non-circular shape that one through an ocular inspection can determine that the coupling portion 9 on the coupling member 8 of the discharge device 2 does not fit together with the coupling portion 5 on the coupling member 4 of the package 1.

10       If the coupling member 4 of the package 1 is located in a package 1 of opaque wall material, there may be, on the outside of the wall material, a figure with the shape of the non-circular coupling portion 5. This figure is preferably found at that spot where the unbroken portion 6 of the wall 7 of the package 1 is to be broken.

15       The coupling member 4 of the package 1 is preferably provided on the package 1 such that the coupling portion 5 on the coupling member 4 of the package 1, in view of its non-circular shape, has a certain fixed orientation relative to the package 1. The coupling member 8 of the discharge device 2 is preferably provided on said discharge device 2 such that the coupling portion 9 on the coupling member 8 of the discharge device 2, with regard to its non-circular shape, has a certain fixed orientation relative to the discharge device 2.

20       The coupling portions 5, 9 of said coupling members 4, 8 preferably have such a non-circular shape that they must be brought to or set in certain fixed positions relative to each other to permit interconnection thereof.

25       The coupling members 4, 8 of the package 1 and the discharge device 2 can be located, with regard to their non-circular shapes, such that their coupling portions 5, 9 can be interconnected only if the package 1 and the discharge device 2 before interconnection of the coupling members 4, 8 are placed in those positions rela-

6.

tive to each other that they shall occupy after inter-connection of the coupling portions 5, 9.

At the embodiment illustrated in the drawings, the package 1 is elongated and its coupling member 4 located at an end portion 11 thereof, namely the end portion 11 facing downwards when the package 1 is placed in a container 12 or similar. At the embodiment shown, the discharge device 2 has an elongated conduit 13, e.g. a hose. The coupling member 8 is located on one end of the hose 13 while the other end of said hose 13 is connected to a pump device 14 which e.g. may be constructed as a suction and pump device 14 such that the product 3 can be brought to flow from the coupling member 8 through the hose 13 to said suction and pump device 14. This suction and pump device 14 comprises an elastic suction and pump means 15 which can be affected by means of a manually operable pump member 16 for reduction of the volume of a suction and pump chamber 17. Thereby, that portion of the product 3 which has been sucked out of the package 1 is pumped through the hose 13 to the suction and pump chamber 17 and out of said chamber through a discharge pipe 18 or similar. The suction and pump means 15 is designed to regain its original shape when it is no longer affected by the pump member 16, whereby a portion of the product 3 is sucked out of the package 1 to the suction and pump chamber 17. At the embodiment shown, the suction and pump device 14 is brought down into an upwardly open groove 12a in the upper parts of the container 12 such that the suction and pump device 14 is fixed in that position relative to the container 12. The hose 13 extends downwards from the suction and pump device 14 and is down below connected to the coupling member 4 of the package 1 through the coupling member 8.

The package 1 and the discharge device 2 are interconnected before they are placed in the container 12. This is done e.g. by placing the package 1 on a support with its coupling member 4 directed upwards, whereby



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one must be able to see where the coupling member 4 is located for connection to the coupling member 8 of the discharge device 2. If the package 1 is made of transparent material one can directly see where the coupling member 4 is located in the package 1. If the package 1 is opaque, one can see on the outside of the package 1 where the coupling member 4 is attached. Eventually, there may be a mark on the outside of the package 1 for showing where the coupling member 4 is located in the package 1.

For connection of the coupling member 8 of the discharge device 2 to the coupling member 4 of the package 1, said former coupling member 8 is pressed through the unbroken portion 6 of the wall 7 of the package 1. Hereby, the non-circular coupling portions 5, 9 of the coupling members 4, 8 are located such that they can be connected to each other when the hose 13 is held in parallel or substantially in parallel with the longitudinal direction of the package 1, but not when the hose 13 is not held in said position relative to the package 1.

The coupling portion 5 of the coupling member 4 of the package 1 preferably defines a non-circular opening 19 and the coupling portion 9 of the coupling member 8 of the discharge device 2 is shaped as a tube member 20 having such non-circular cross-sectional shape that it fits into said opening 19. The non-circular shape of the coupling portions 5, 9 can be any non-circular shape. Examples of non-circular shapes are polygonal shapes, e.g. trilateral, quadrilateral, pentagonal, hexagonal, heptagonal or octahedral shapes. The non-circular shape may alternatively be e.g. an irregular oval as is shown in fig. 5 or partly circular and partly non-circular.

The coupling members 4, 8 may be fixedly attached to the package 1 and discharge device 2 respectively, as is shown in the figures. Alternatively, the coupling members 4, 8 of the discharge device 2 and/or the package 1 and/or their coupling portions 5, 9 may be rotatably

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mounted such that they may be rotated or rotate relative to the discharge device 2 and/or the package 1 prior to and/or after the interconnection of the coupling members 4, 8.

5       An example of a rotatable coupling member 8 on the discharge device 2 is illustrated in fig. 6. At this construction, the discharge device 2 includes an elbow-pipe piece 21, the upper end of which is provided on the hose 13 and which down below has a laterally directed part 22. This laterally oriented part 22 has an out-  
10       wardly directed flange 23 and the tube member 20 also has an outwardly directed flange 24. The outwardly directed flanges 23, 24 connect to each other such that the laterally directed part 22 and the tube member 20 are  
15       rotatably connected to each other such that they can rotate about an imaginary line 25 in parallel with the direction of movement of the coupling member 8 when said coupling member 8 is connected to the coupling member 4.

20       The hose 13 may be workable - e.g. elastic - in such a way that it permits rotation of the coupling member 8 about the imaginary line 25.

25       The coupling member 4 of the package 1 may have different shapes. A suitable shape is that it comprises an outer part 26 which is provided on the unbroken portion 6 of the wall 7 of the package 1. This outer part 26 defines the coupling portion 5 on the coupling member 4 of the package 1. The coupling member 4 of the package 1 further comprises an inner annular part 27 which is located within the outer part 26.

30       The outer part 26 and the inner annular part 27 are connected to each other by means of at least connecting parts 28 between which there are openings 29 for through-flow of the product 3.

35       The inner annular part 27 has a circular or substantially circular opening 30 for the product 3 and a circular or substantially circular outer edge.

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The diameter of the outer edge of the outer part 26 is substantially equal to or less than the diameter of the outer edge of the inner annular part 27. The two connecting parts 28 are located opposite each other and  
5 they are connected to the outer part 26 at its outer edge and to the inner circular part 27 at its opening 30.

The outer part 26 may have a collar 31 which is directed in towards the inner annular part 27 and the connecting parts 28 can be connected to an inner edge of  
10 said collar 31.

Thus, the non-circular coupling portion 5 of the coupling member 4 of the package 1 is oriented so relative to the package 1 that the non-circular coupling portion 9 of the coupling member 8 of the hose 13 can be  
15 connected to the coupling portion 5 of the coupling member 4 of the package 1 only when the hose 13 is in a predetermined position relative to the package 1 or can be brought into said predetermined position relative to the package 1. Thus, the package 1 can be located in  
20 the container 12 together with the hose 13 such that said hose 13, when situated in said predetermined position relative to the package 1, holds a predetermined position relative to the container 12.

In fig. 7, certain parts of a device for forming  
25 the package 1 and filling it with the product 3 are illustrated. This device includes two rolls 34, 35 between which a double web 36 runs in downward direction. Beneath the rolls 34, 35 there is a slitting station 37 for slitting the web 36 and beneath that a station 38 for insertion of the coupling member 4 of the package 1 through  
30 the slit and for attachment of the coupling member 4 of the package 1 to the inner side of the wall 7 of the package 1. A filler pipe 39 for filling the package 1 with the product 3 protrudes through the slit and is directed  
35 downwards and opens into the package 1 beneath a longitudinal-weld station 40. This is adapted to weld up the

10.

slit for obtaining a package 1 which is sealed in the longitudinal direction thereof.

Beneath the longitudinal-weld station 40 there are two rolls 41, 42 beneath which the package 1 is filled with the product 3. Beneath the filled package 1 there is provided a transversal-weld and cutting station 43 which is adapted for transversal welding of open transverse portions of the package 1 and for cutting the continuous packages 1 to separate packages.

10       At the station 38 for insertion and attachment of the coupling member 4, there is provided a schematically illustrated control device 44 with two control or guide means 45, 46. This control device 44 is adapted to guide the coupling member 4 of the package 1 such that its  
15       coupling portion 5 attains a predetermined orientation, in view of its non-circular shape, relative to the package 1 when it is located therein. Hereby, the coupling member 4 can be brought to slide on the guide means 45, 46, whereby said guide means e.g. may engage two U-shaped  
20       grooves 47, 48 which - seen from the side towards the coupling member 4 - are defined by the outer part 26, the inner annular part 27 and the connecting parts 28 of the coupling member 4. During this guidance, the coupling member 4 can slide on the guide means 45, 46 until  
25       the coupling portion 5 engages the unbroken portion 6 of the wall 7 of the package 1 and can be attached thereto.

The invention is not limited to the embodiments described above and illustrated in the drawings, but its construction and function may vary within the scope of  
30       the subsequent claims. Thus, it can be mentioned that the coupling portions 5, 9 may have another non-circular shape than those mentioned and shown, the coupling members 4, 8 may have other shapes than those described and shown and the container 12 may instead be a bracket or  
35       carrier for holding the package 1 and the discharge device 2 without containment thereof. The discharge device 2 may in a simple embodiment include or consist of a hose

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or a tube with or without a non-return valve device and the product 3 may be pressed or simply flow out through the hose or tube.

12.

## Claims:

- 1, Device at packages which are adapted for location in a container,  
wherein the package (1) is made of synthetic material,  
wherein a discharge or outfeed device (2) is provided to discharge a liquid or semi-liquid product (3), e.g. ketchup, mustard, mayonnaise and similar or skin cream, shampoo, soap and similar or medicine, from the package (1) when said package is located in the container (12),  
wherein the package (1) comprises a coupling member (4) with a coupling portion (5),  
wherein the coupling member (4) is located in the package (1) such that it will be situated at the bottom of the container (12) when the package (1) is located therein,  
wherein the discharge device (2) comprises a conduit (13) for feeding product (3) coming from the package (1),  
wherein the conduit (13) includes a coupling member (8) with a coupling portion (9),  
wherein the coupling member (4) of the package (1) is located within an unbroken portion (6) of the wall (7) of the package (1), and  
wherein the coupling members (4, 8) of the package (1) and the discharge device (2) can be connected to each other by bringing the coupling portion (9) of the coupling member (8) of the discharge device (2) to penetrate the unbroken portion (6) of the wall (7) of the package (1) and then bring it to cooperate with the coupling portion (5) of the coupling member (4) of the package (1) such that said coupling members (4, 8) are interconnected, characterized in  
that the package (1) and the discharge device (2) are interconnectable to provide a liquid-tight connection therebetween only if the coupling portions (5, 9) of their coupling members (4, 8) have non-circular shapes which are adapted to each other,

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- that the non-circular coupling portion (5) of the coupling member (4) of the package (1) is oriented relative to the package (1) such that the non-circular coupling portion (9) of the coupling member (8) of the conduit (13) can be connected to said coupling portion (5) of the coupling member (4) of the package (1) only when the conduit (13) is located in a predetermined position relative to the package (1) or can be brought into said predetermined position relative to the package (1), and
- that the package (1) can be located in the container (12) along with the conduit (13) such that the conduit (13), when situated in said predetermined position relative to the package (1), holds a predetermined position relative to the container (12).
2. Device according to claim 1, characterized in that the conduit (13) in said predetermined position extends from lower parts of the package (1) in a direction towards upper parts thereof, whereby said lower parts constitute lower parts of the package (1) when said package (1) is located in the container (12).
3. Device according to claim 2, characterized in that the package (1) is elongated and that the conduit (13) extends in or substantially in the longitudinal direction of the package (1).
4. Device according to claim 2 or 3, characterized in that the conduit (13) at the top is connected to a pump device (14) forming part of the discharge device (2) for pumping out product (3) from the package (1).
5. Device according to claim 4, characterized in that the pump device (14) can be mounted on and released from the container (12).
6. Device according to claim 5, characterized in that the pump device (14) is attached to the conduit (13) and can be mounted on upper parts of the container (12) in connection with or after having

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located the package (1) along with the conduit (13) in the container (12).

7. Device according to any of claims 3-6, c h a -  
r a c t e r i z e d i n that the pump device (14) can  
5 be mounted on the container (12) by bringing it down from  
above into a groove (12a) in upper parts of the container (12).

8. Device according to any of claims 3-7, c h a -  
r a c t e r i z e d i n that the pump device (14) is  
10 provided to suck out product (3) from the package (1)  
and into said pump device (14), and to discharge or dispense the product (3) from the pump device (14).

9. Device according to claim 8, c h a r a c t e -  
r i z e d i n that the pump device (14) comprises an  
15 elastic suction and pump means (15) which can be affected  
by means of a manually operable pump member (16) for pumping product (3) which has been sucked out of the package (1), from the pump device (14), and that the suction and pump means (15) after said affection returns to an original  
20 nal shape, whereby it sucks product (3) out of the package (1).

10. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n that a device (23, 24) permitting rotation is provided to permit location of the conduit (13) in said predetermined position relative to the  
25 package (1).

11. Device according to claim 10, c h a r a c t e -  
r i z e d i n that the device permitting rotation is defined by rotatably mounting the coupling members (8  
30 and/or 4) and/or the coupling portions (9 and/or 5) of the conduit (13) and/or the package (1) such that said conduit (13) can be rotated or rotate relative to the package (1) and about an imaginary line (25) running in parallel with the direction of movement of the coupling  
35 member or coupling members during connection thereof to each other.



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12. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n that the conduit consists of  
or includes a hose (13) which can be formed in such a  
manner that it permits rotation of the coupling member  
5 (8) about an imaginary line (25) running in parallel with  
the direction of movement of the coupling member or coup-  
ling members during connection thereof to each other.

13. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n that the coupling portion (5)  
10 on the coupling member (4) of the package (1) has such  
a non-circular shape that, if a coupling portion (9) ha-  
ving a circular or other unfit shape on a coupling mem-  
ber (8) on a discharge device (2) is connected to said  
non-circular coupling portion (5) on the coupling member  
15 (4) of the package (1),

a) it is not possible to interconnect the coupling  
portions (5, 9) of the coupling members (4, 8) such that  
they attach to each other and/or

b) after interconnection of the coupling portions  
20 (5, 9) of the coupling members (4, 8), gaps appear between  
said coupling portions (5, 9) such that the product (3)  
leaks out of the package (1) through said gaps.

14. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n that the coupling portion (5)  
25 on the coupling member (4) of the package (1) has such a  
non-circular shape that one through an ocular inspection  
can determine that the coupling portion (9) having a cir-  
cular shape on the coupling member (8) of the discharge  
device (2) does not fit together with the coupling por-  
30 tion (5) on the coupling member (4) of the package (1).

15. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n that the coupling member (4)  
of the package (1) has a coupling portion (5) defining  
a non-circular opening (19) and that the coupling mem-  
35 ber (8) of the discharge device (2) has a coupling por-  
tion (9) including a tube member (20) with a non-circu-  
lar cross-sectional shape fitting into said opening (19).

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16. Device according to claim 15, c h a r a c t e -  
r i z e d i n that the opening (19) has an oval shape  
and that the tube member (20) has a corresponding oval  
cross-sectional shape.

5 17. Device according to claim 15, c h a r a c t e -  
r i z e d i n that the opening (19) has a partly cir-  
cular, partly non-circular shape and that the tube mem-  
ber (20) has a corresponding partly circular, partly  
non-circular cross-sectional shape.

10 18. Device according to claim 15, c h a r a c t e -  
r i z e d i n that the opening (19) has a polygonal  
shape and that the tube member (20) has a corresponding  
polygonal shape.

15 19. Device according to claim 18, c h a r a c t e -  
r i z e d i n that the opening (19) has a trilateral,  
quadrilateral, pentagonal, hexagonal, heptagonal or octa-  
hedral shape and that the tube member (20) has a corre-  
sponding trilateral, quadrilateral, pentagonal, hexagonal,  
heptagonal or octahedral shape.

20 20. Device according to any preceding claim, c h a -  
r a c t e r i z e d i n

that the coupling member (4) of the package (1) comp-  
rises an outer part (26) which is provided on the unbroke-  
n portion (6) of the wall (7) of the package (1),

25 that the outer part (26) defines the coupling por-  
tion (5) on the coupling member (4) of the package (1),

that the coupling member (4) of the package (1) comp-  
rises an inner annular part (27) which is located within  
the outer part (26), and

30 that the outer part (26) and the inner annular part  
(27) are connected to each other by means of at least  
two connecting parts (28) between which there are ope-  
nings (29) for through-flow of the product (3).

21. Device according to claim 20, c h a r a c t e -  
35 r i z e d i n

that the outer part (26) has a circular or substan-  
tially circular outer edge,

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that the inner annular part (27) has an opening (30) for the product (3) and a circular or substantially circular outer edge,

that the diameter of the outer edge of the outer  
5 part (26) is substantially equal to or less than the diameter of the outer edge of the inner annular part (27),

that the connecting parts (28) are located opposite each other, and

that the connecting parts (28) are connected to the  
10 outer part (26) at its outer edge and to the inner annular part (27) at its opening (30).

22. Device according to claim 20 or 21, c h a -  
r a c t e r i z e d i n that the outer part (26) has a collar (31) which is directed in towards the inner annu-  
15 lar part (27) and that the connecting parts (28) are connected to an inner edge of said collar (31).

23. Coupling members at packages which are adapted for location in a container,

wherein the package (1) is made of synthetic material,  
20 wherein a discharge or outfeed device (2) is provided to discharge a liquid or semi-liquid product (3), e.g. ketchup, mustard, mayonnaise and similar or skin cream, shampoo, soap and similar or medicine, from the package (1) when said package (1) is located in the container (12),

25 wherein the package (1) comprises a coupling member (4) with a coupling portion (5),

wherein the coupling member (4) is located in the package (1) such that it will be situated at the bottom of the container (12) when the package (1) is located  
30 therein,

wherein the discharge device (2) comprises a conduit (13) for feeding product (3) coming from the package (1),

wherein the conduit (13) includes a coupling member (8) with a coupling portion (9),

35 wherein the coupling member (4) of the package (1) is located within an unbroken portion (6) of the wall (7) of the package (1), and

18.

wherein the coupling members (4, 8) of the package (1) and the discharge device (2) can be connected to each other by bringing the coupling portion (9) of the coupling member (8) of the discharge device (2) to penetrate the unbroken portion (6) of the wall (7) of the package (1) and then bring it to cooperate with the coupling portion (5) of the coupling member (4) of the package (1) such that said coupling members (4, 8) are interconnected, characterized in

10 that the package (1) and the discharge device (2) are interconnectable to provide a liquid-tight connection therebetween only if the coupling portions (5, 9) of their coupling members (4, 8) have non-circular shapes which are adapted to each other,

15 that the non-circular coupling portion (5) of the coupling member (4) of the package (1) is oriented relative to the package (1) such that the non-circular coupling portion (9) of the coupling member (8) of the conduit (13) can be connected to said coupling portion (5) of the coupling member (4) of the package (1) only when the conduit (13) is located in a predetermined position relative to the package (1) or can be brought into said predetermined position relative to the package (1), and

20 that the package (1) can be located in the container (12) along with the conduit (13) such that the conduit (13), when situated in said predetermined position relative to the package (1), holds a predetermined position relative to the container (12).

24. Method during application of a coupling member at packages which are adapted for location in a container, wherein the package (1) is made of synthetic material, wherein a discharge or outfeed device (2) is provided to discharge a liquid or semi-liquid product (3), e.g. ketchup, mustard, mayonnaise and similar or skin cream, shampoo, soap and similar or medicine, from the package (1) when said package is located in the container (12),

30

19.

wherein the package (1) comprises a coupling member (4) with a coupling portion (5),

wherein the coupling member (4) is located in the package (1) such that it will be situated at the bottom of the container (12) when the package (1) is located therein,

wherein the discharge device (2) comprises a conduit (13) for feeding product (3) coming from the package (1),

wherein the conduit (13) includes a coupling member (8) with a coupling portion (9),

wherein the coupling member (4) of the package (1) is located within an unbroken portion (6) of the wall (7) of the package (1), and

wherein the coupling members (4, 8) of the package (1) and the discharge device (2) can be connected to each other by bringing the coupling portion (9) of the coupling member (8) of the discharge device (2) to penetrate the unbroken portion (6) of the wall (7) of the package (1) and then bring it to cooperate with the coupling portion (5) of the coupling member (4) of the package (1) such that said coupling members (4, 8) are interconnected,

c h a r a c t e r i z e d b y

guiding the coupling member (4) of the package (1) such that the coupling portion (5) thereof, in view of its non-circular shape, attains a predetermined orientation relative to the package (1) when located therein.

25. Method according to claim 24, c h a r a c t e r i z e d b y guiding the coupling member (4) of the package (1) by means of a control device (44) in view of the non-circular shape of the coupling portion (5) thereof, to a position in which the coupling member (4) is located on an inner side of the wall (7) of the package (1).

26. Method according to claim 25, c h a r a c t e r i z e d b y guiding the coupling member (4) of the package (1) in view of the non-circular shape of its coupling portion (5), by bringing it to slide along one

20.

or more guide means (45 and/or 46) forming part of the control device (44).

27. Method according to claim 25 or 26, wherein the coupling member (4) of the package (1) comprises an outer  
5 part (26), an inner annular part (27) and at least two connecting parts (28) connecting the outer part (26) and the inner annular part (27) to each other such that said outer part (26), said inner annular part (27) and said connecting parts (28) together - seen from one side to-  
10 wards the coupling member - define two outwardly open U-shaped grooves (47, 48) on opposite sides of the connecting parts (28), c h a r a c t e r i z e d b y guiding the coupling member (4) of the package (1) by means of two guide means (45, 46) forming part of the  
15 control device (44), said guide means engaging the two U-shaped grooves (47, 48) defined by the coupling member (4) such that said coupling member (4) can slide thereon.

28. Method according to any of claims 25 - 27, c h a r a c t e r i z e d b y guiding and holding  
20 the coupling member (4) of the package (1) by means of said guide means (45 and/or 46) until the coupling portion (5) thereof is firmly attached to the unbroken portion (6) of the wall (7) of the package (1)..

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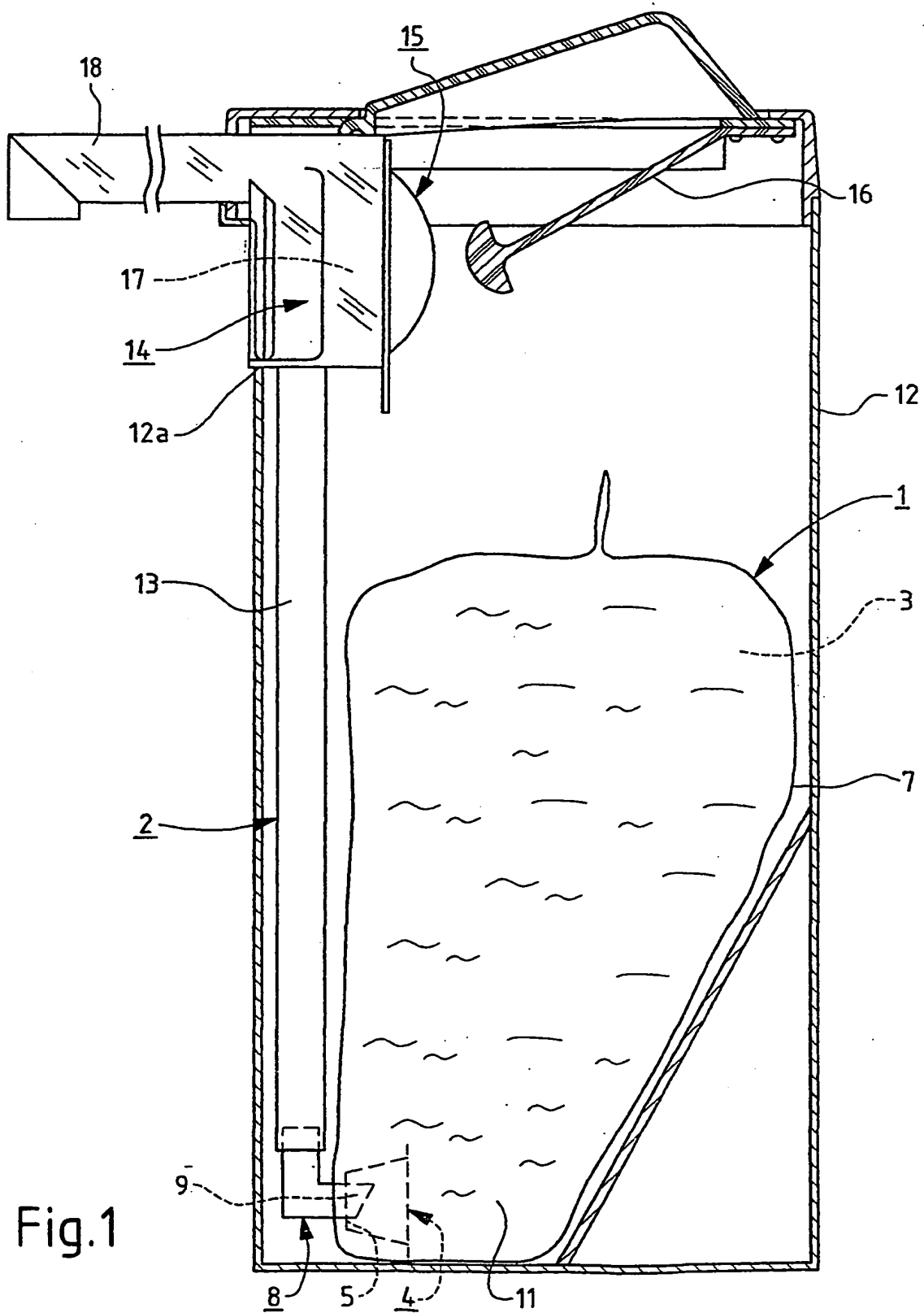
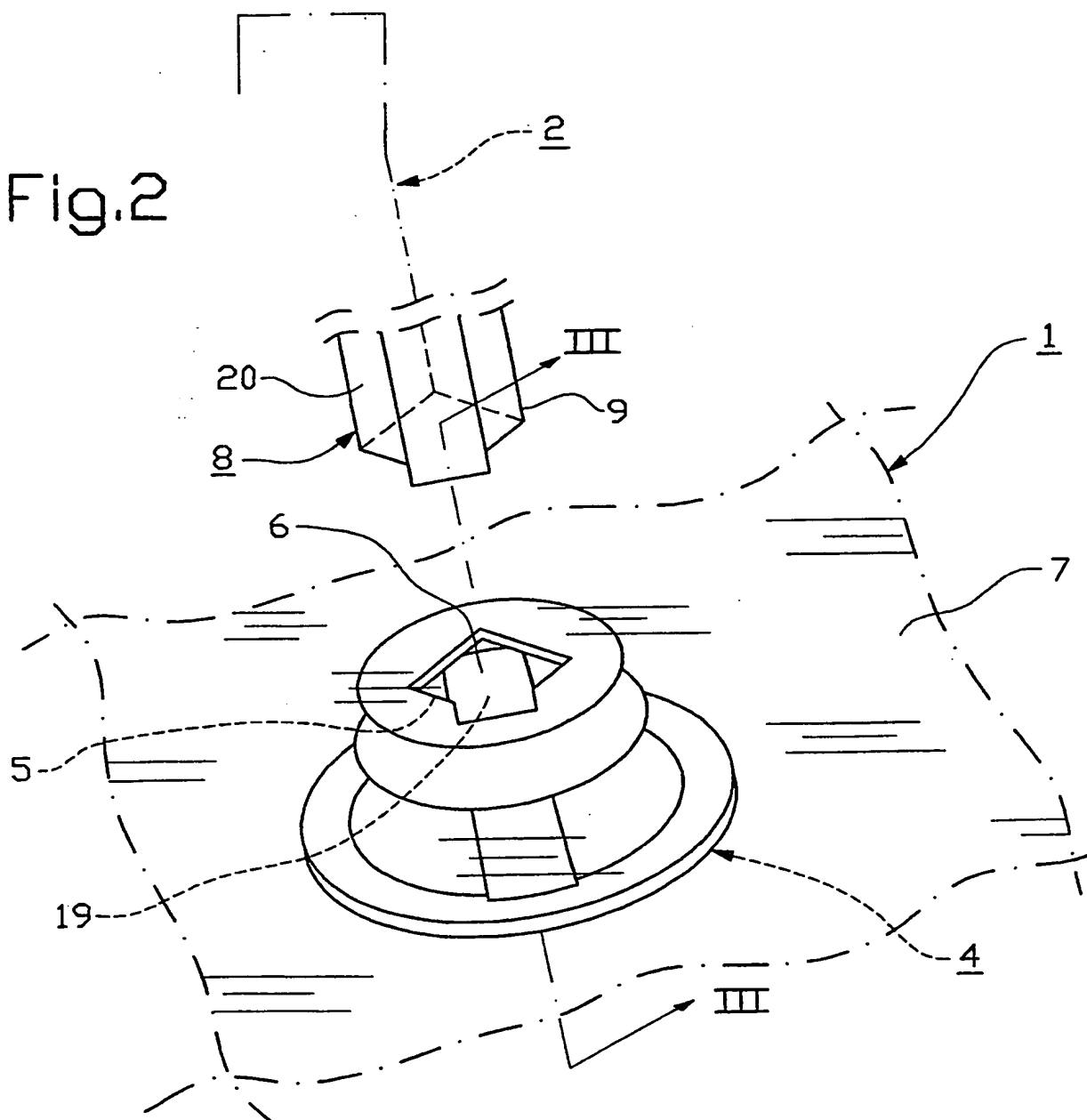


Fig.1

Fig.2





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Fig.3

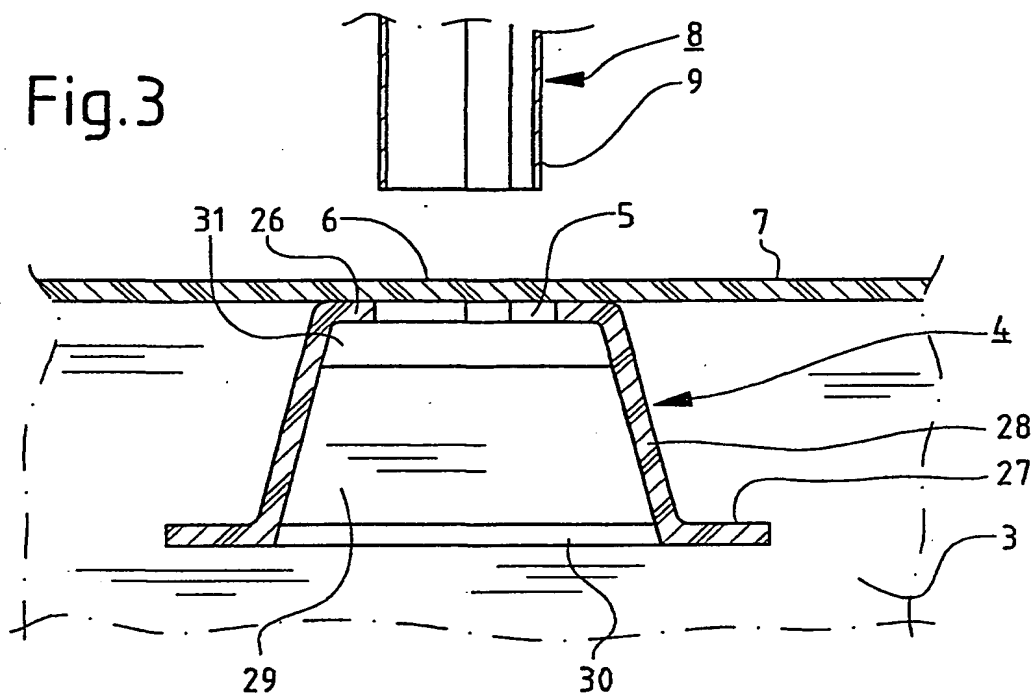


Fig.4

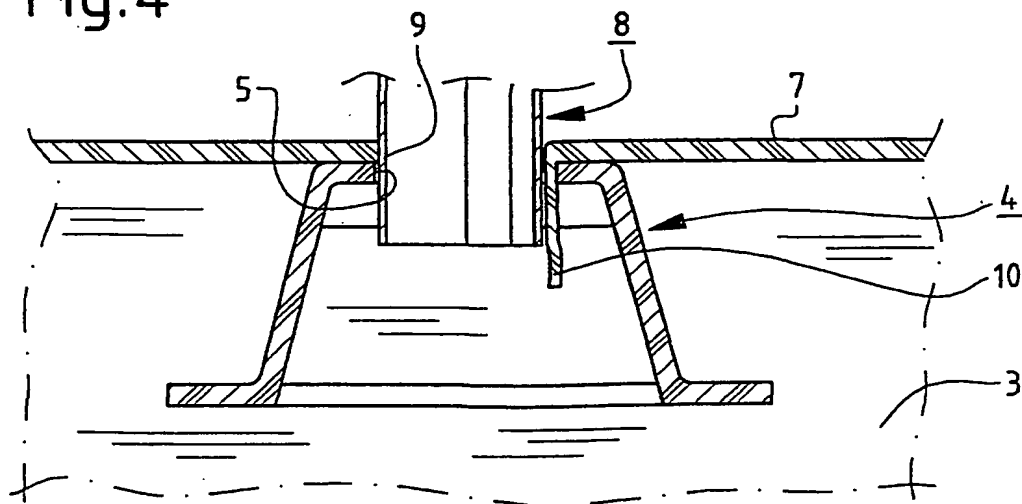


Fig.5

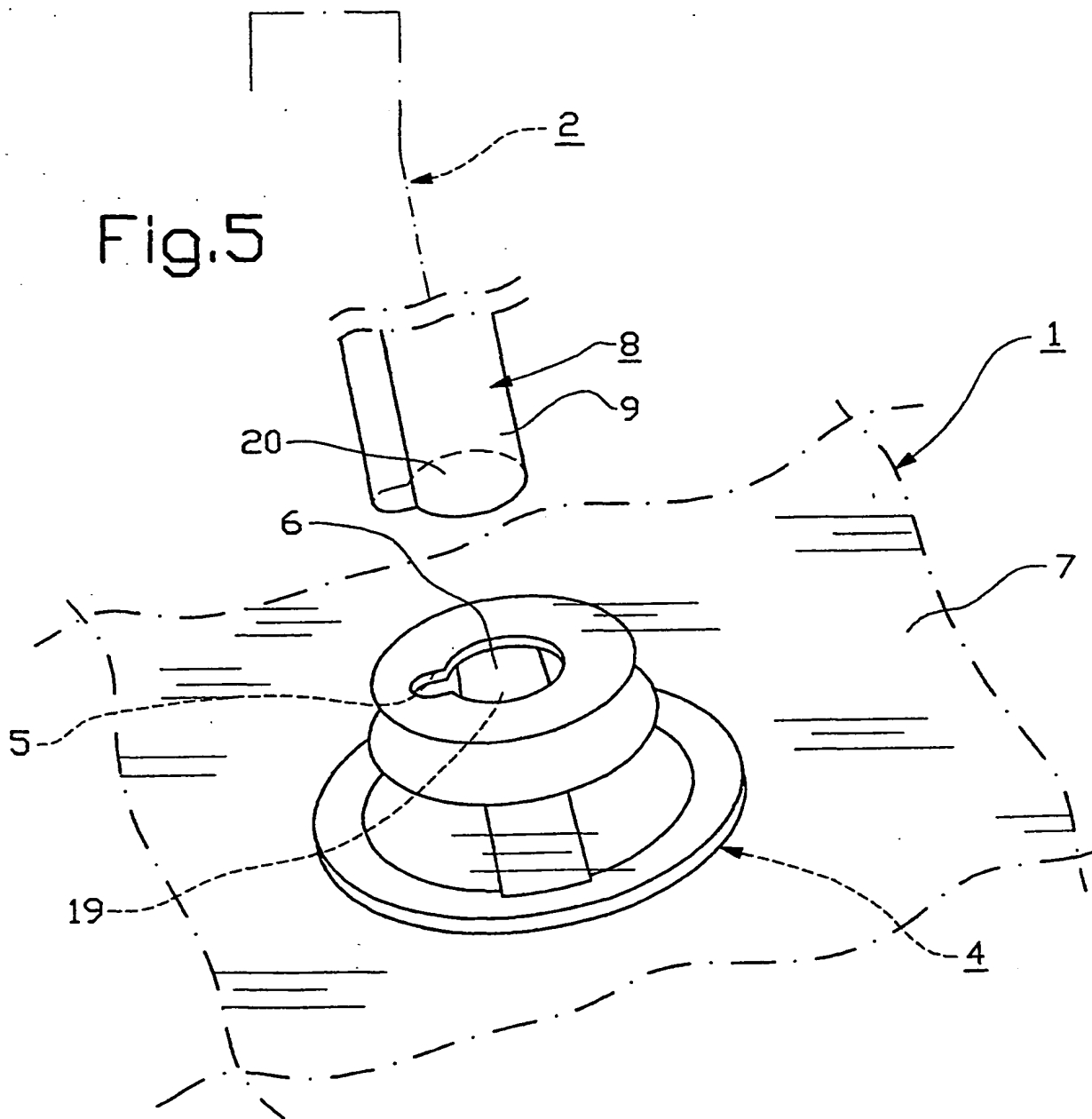
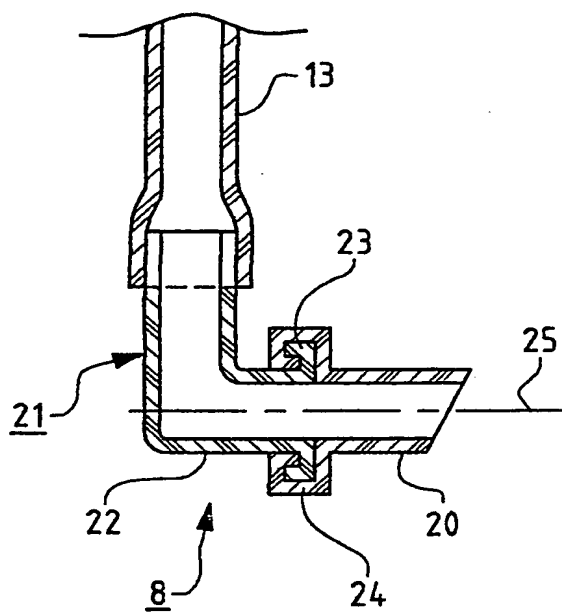
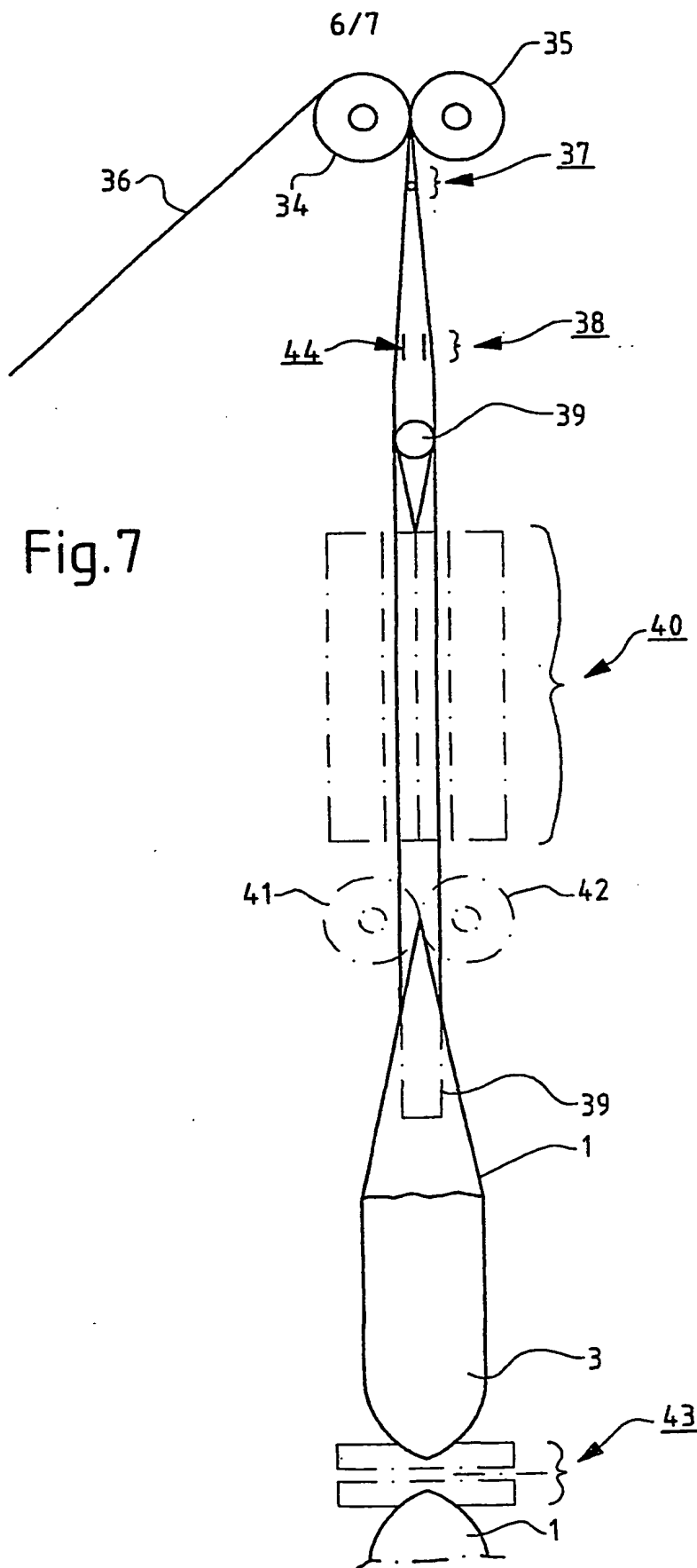


Fig.6





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Fig.9

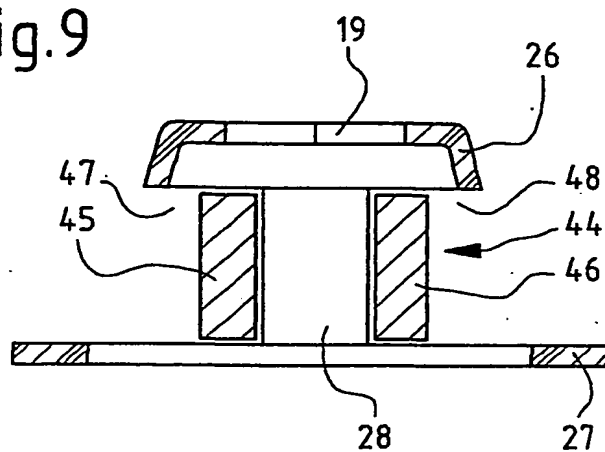
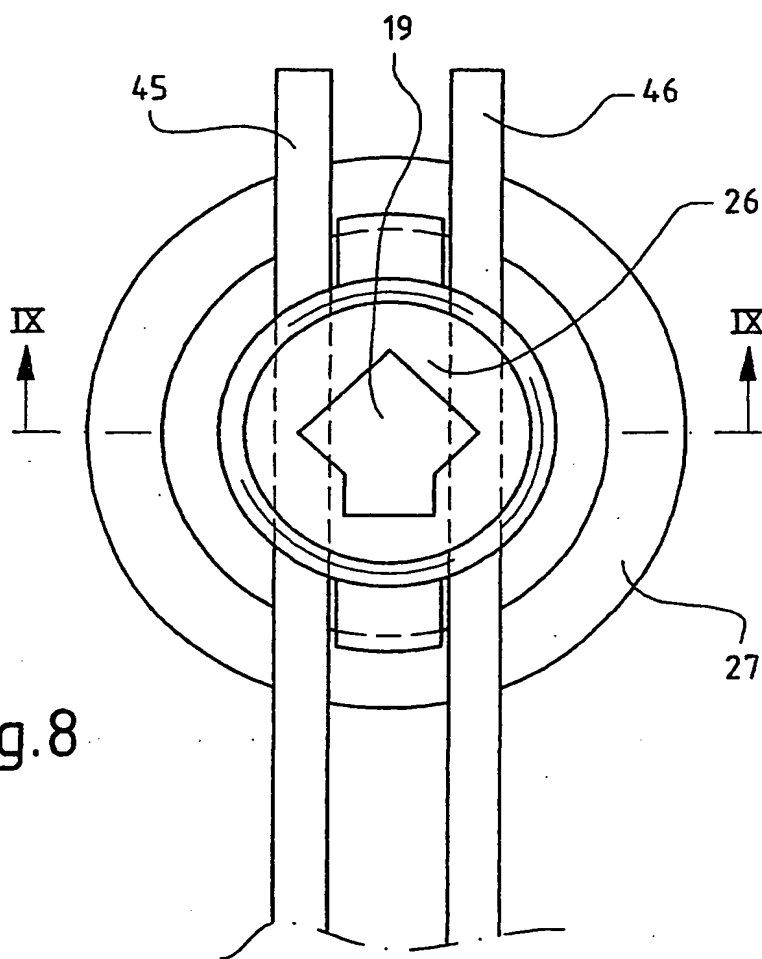


Fig.8



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/02079

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 77/06, B65D 33/36, B65D 47/36

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched.

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SE 9703496-1 A (ASEPT INTERNATIONAL AB), 30 March 1999 (30.03.99), page 12, 1:st paragraph-3:rd paragraph --	1-28
A	US 5452826 A (STERN), 26 Sept 1995 (26.09.95), column 2, line 15 - line 56 --	1-28
A	WO 8101992 A1 (DRENNOW, STEN G), 23 July 1981 (23.07.81), page 2, line 10 - page 4, line 15 --	1,18,30
A	SE 9703497-9 A (ASEPT INTERNATIONAL AB), 30 March 1999 (30.03.99), page 3, 3:rd paragraph, page 5 1:st paragraph --	1,18,24

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents

"A" document defining the general state of the art which is not considered to be of particular relevance

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"&amp;" document member of the same patent family

Date of the actual completion of the international search

29 January 2002

Date of mailing of the international search report

05-02-2002

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/02079

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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International application No.

PCT/SE 01/02079

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